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ABSTRACT

There is widespread concern about the use and abuse of alcohol and other drugs by adolescents and young adults. It has yet to be determined whether drug use in itself is invariably associated with disruptive or problem use of drugs. Additionally, drug use may vary by frequency and quantity of ingestion which may be differentially related to disruptive or problem use of drugs. To explore these issues, data were obtained from 739 young adults as part of an 8-year longitudinal study of drug use and abuse. A multitrait/multimethod approach with latent variable models was used to separate use factors of particular drugs (alcohol, cannabis, hard drugs, cocaine) from latent constructs of general drug use frequency, quantity, disruptive drug use, and problem drug use. Self-reported frequency of use measures were based on 7-point rating scales that ranged from "no use" to "more than once a day." Twenty-one different substances were assessed; there were two quantity of drug use measures. Disruptive and problem drug use were also assessed. Regression paths between Drug Use Frequency and Disruptive and Subjective Problem Drug Use were not significant; however, the paths between Drug Use Quantity and Subjective Problem Use were significant at greater than the .01 level. These results tend to suggest that the quantity of substances used is more important in the etiology of problem and disruptive use of drugs than is frequency of use for young adults. (NB)

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Separating Effects of Frequency, Quantity, Disruptive, and Problematic Substance Use

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Separating Effects of Frequency, Quantity, Disruptive, and Problematic Substance Use

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There is widespread concern about the use and abuse of alcohol, cannabis, cocaine, and other hard drugs by adolescents and young adults. Such concern exists both within the research community and in the general population. National surveys of high school students indicate that use of such substances, especially alcohol and marijuana, is highly prevalent among today's high school adolescents. There is less known about drug use among young adults. In particular, it is of particular interest to determine whether drug use in itself is invariably associated with disruptive or problem use of drugs. Additionally, use of drugs may vary by frequency and quantity of ingestion which in turn may be differentially related to disruptive or problem use of drugs.

Data were obtained from 739 young adults as part of an eight-year (fifth data assessment point) longitudinal study of drug use and abuse. Table 1 presents the sample description including sex, age, ethnicity, current life activities, income for the past year, and current living arrangements.

Using a multi-trait/multi-method approach with latent variable models, use factors of particular drugs (alcohol, cannabis, hard drugs, and cocaine), were separated from latent constructs of general drug use frequency, quantity, disruptive drug use, and problem drug use. This methodological approach had the effect of distinguishing substance-specific factors (i.e.; Alcohol Use alone, or Cannabis Use alone) from general tendencies towards using drugs and having problems with general drug use (i.e.; Drug Use Frequency, or Disruptive Drug Use). These latter latent constructs are the substantive focus of this

investigation.

Self-reported frequency of use measures were based on 7-point rating scales that ranged from no use (1) to more than once a day (7). Twenty-one different substances were assessed including use of beer, wine, liquor, marijuana, hashish, heroin, sedatives, barbiturates, psychedelics, PCP, amphetamines, and cocaine. These items were summed into four frequency scales: Alcohol, cannabis, cocaine, and hard drugs. There were two quantity of drug use measures. These were based on self-reported number of drinks on an average day (ranging from 0 to more than 6 drinks), and number of marijuana cigarettes smoked per day (ranging from 0 to seven or more). Disruptive drug use was assessed by asking subjects how often they were "high" on nine different substances while at work or school during the past six months. The scale ranged from none (1) to more than 40 times (7). These items were summed into four disruptive use scales: Alcohol, cannabis, cocaine, and hard drugs. Problem drug use was assessed with three separate items that assessed the subjects' self-admission of a drug or alcohol problem. These items included subjective reports of problems with alcohol, problems with drugs, and troubles with drugs or alcohol.

Figure 1 is a model of the multi-trait/multi-method design and contains the results of the final confirmatory factor analysis. Both maximum-likelihood (ML) and arbitrary generalized least squares (AGLS) solutions for the model were obtained using the EQS structural equation program. Since many of the variables were severely kurtotic, the AGLS solution is most appropriate. The initial fit of the confirmatory factor model was reasonably good for the ML solution: $\chi^2(39, n = 739) = 80.59$, $p < .001$, normed fit index (NFI) = .98. The fit was quite good for the AGLS solution, $\chi^2(39, n = 739) = 49.27$, $p = .12$, NFI = .94.

In this model, the substantive factors depicted on the right-hand side of Figure 1 (Drug Use Frequency, Drug Use Quantity, Disruptive Drug Use, and Subjective Problem Drug Use) captured the bulk of the covariation in the observed data (e.g., the 13 use/problem use measures). The associations that remained between the substance-specific factors (those on the left-hand side of Figure 1) after the influence of the substantive factors had been controlled tended to be smaller. We will not interpret these relationships since our primary focus is on the substantive factors (i.e.; Disruptive Use and Subjective Problem Drug Use).

To test whether the Drug Frequency factor and the Drug Quantity factor were measuring the same construct or underlying tendency, a model was run in which the correlation between the two factors was constrained to be 1.0. This model produced a significant decrement in fit for both the ML and AGLS solutions, thus allowing the conclusion that the two measures were reflecting different aspects of drug use.

Once the confirmatory factor analytic model was constructed, a regression model was tested with the latent variables Drug Use Frequency and Drug Use Quantity predicting Disruptive Drug Use and Subjective Problem Drug Use. The regression paths between Drug Use Frequency and Disruptive and Subjective Problem Drug Use were not significant; however, the paths between Drug Use Quantity and Disruptive and Subjective Problem Use were significant at greater than the .01 level (see Figure 2). These results tend to indicate that quantity of substances used is more important in the etiology of problem and disruptive use of drugs than frequency of use for young adults.

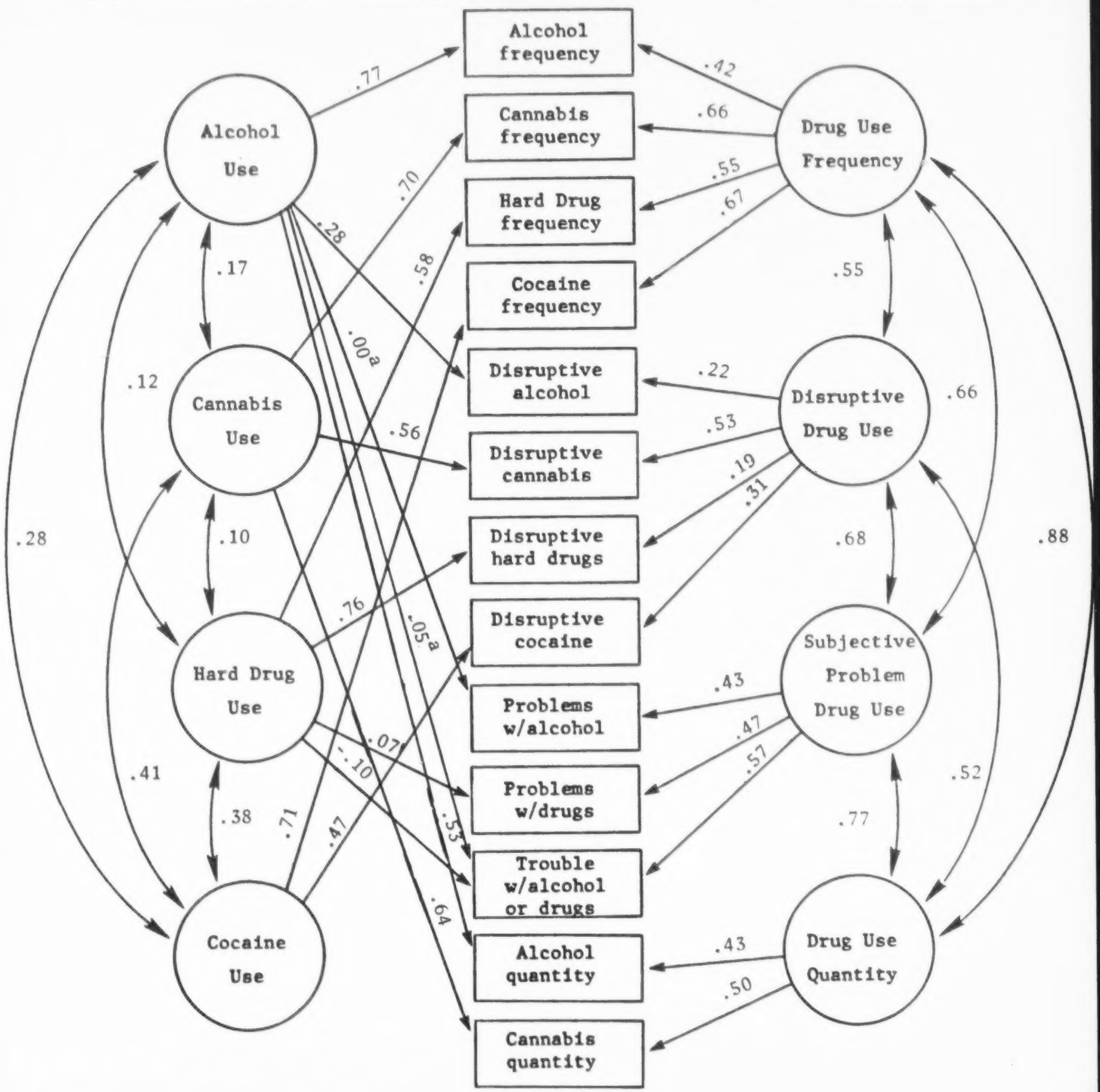
Table 1

Description of Sample

Variable	Number of Subjects	Percent of Sample
Total	739	100%
Sex		
- Male	221	30%
- Female	518	70%
Age		
- 21	274	37%
- 22	245	33%
- 23	195	26%
- 24	15	3%
Ethnicity		
- Black	111	15%
- Hispanic	72	10%
- White	467	63%
- Asian	66	9%
- Other	23	3%
Current Life Activity		
- Military	23	3%
- Junior college	83	11%
- University	153	21%
- Part-time job	102	14%
- Full-time job	343	46%
- None	25	4%
Income Last Year		
- None	71	9%
- Less than $5000	242	32%
- Between $5000 and $15000	334	47%
- Over $15000	92	12%
Current Living Arrangements		
- Alone	28	4%
- With parent(s)	343	46%
- Spouse	77	10%
- Spouse and child(ren)	56	8%
- Cohabitation	67	9%
- Dormitory	40	5%
- With roommates	96	12%
- Other	32	4%

Figure 1

Multitrait-multimethod Confirmatory Factor Model

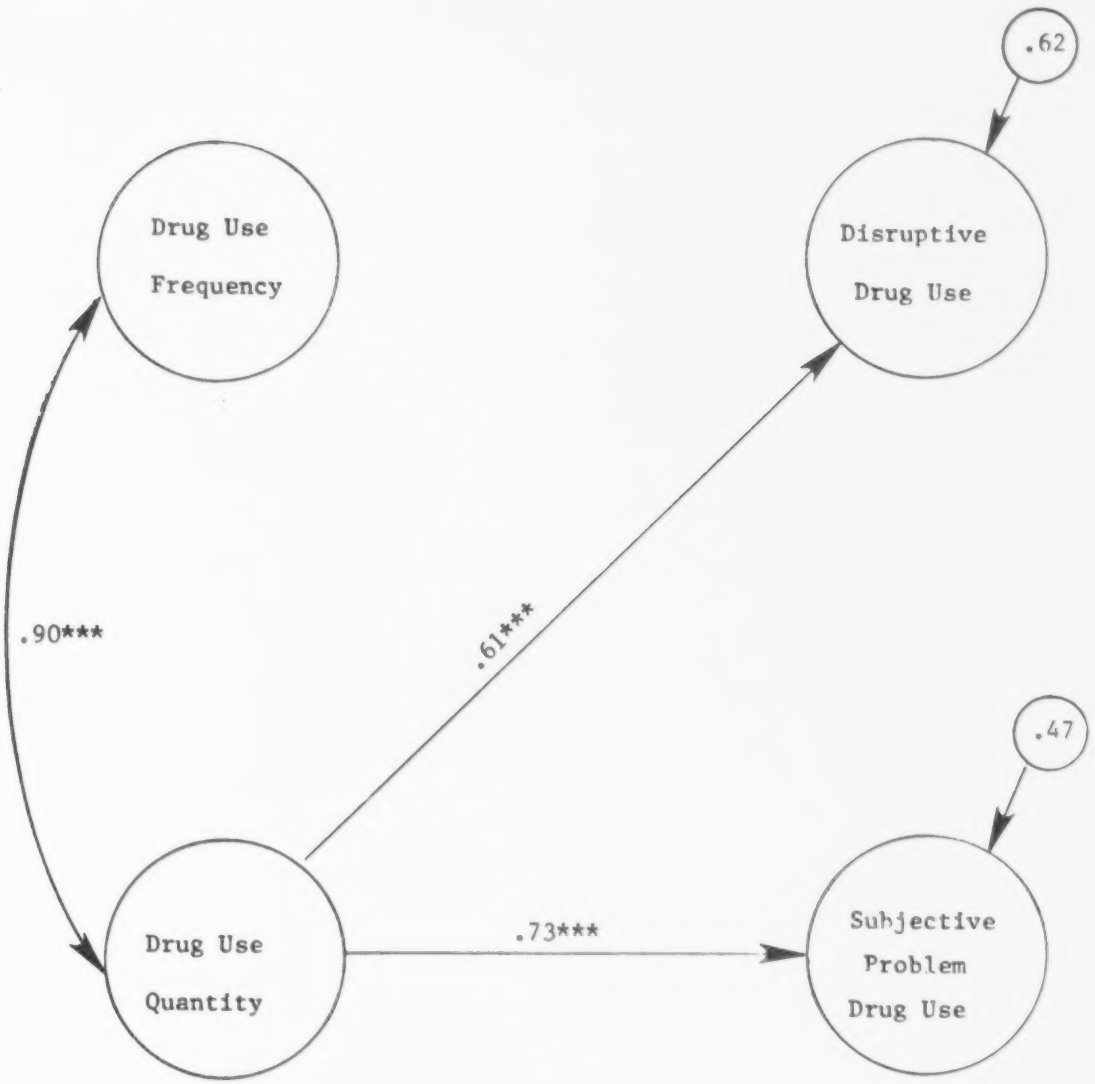


Standardized regression coefficients.
a: not significant.

Figure 2

Prediction of Disruptive and Subjective Problem Drug Use

by Drug Use Quantity



Standardized regression coefficients.

***p<.001.